

**Grades: 9-12**

### **Nova, "Killer Floods"**

All over the world, scientists are discovering traces of ancient floods on a scale that dwarfs even the most severe flood disasters of recent times. What triggered these cataclysmic floods and could they strike again? Over a vast expanse of Washington State called the Channeled Scablands, the level prairie gives way to bizarre, gargantuan rock formations: house-sized boulders seemingly dropped from the sky; a cliff carved by a waterfall twice the height of Niagara; and potholes resembling ones scoured out by rivers today, but ten times bigger. Like forensic detectives at a crime scene, geologists study these strange features and reconstruct catastrophic Ice Age floods more powerful than all the world's top ten rivers combined. NOVA follows their efforts to uncover the geologic fingerprints of other colossal megafloods in Iceland and - improbably - on the seabed of the English Channel, where hundreds of thousands of years ago, another deluge smashed through a land bridge connecting Britain and France and turned Britain into an island for the first time. These great disasters ripped through terrain and transformed continents in a matter of hours - and similar forces reawakened by climate change are posing an active threat to mountain communities throughout the world today.

**After watching this episode, choose from the following questions and/or tasks to extend your learning**

#### **Question Box 1**

- Describe one concept about floods that you didn't know or didn't understand fully before watching this video.
- The Scablands: what are they, where are they, and what other place on Earth do they best represent?
- How many people do floods kill each year?
- Describe two unique features of the Scablands.
- What did the Texas flood on July 4, 2002 prove?
- What do these megafloods have in common?
- What are some of the features that Vic finds that indicate the Scablands were once covered by water?
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#### **Question Box 2**

- What might you want next year's teacher to know about this program?
- Now that it's over, what are my first thoughts about this program? Are they mostly positive or negative? Explain?

- What is the most important thing I learned personally?
- What were some of the most interesting discoveries I made while working on this program?
- What were some of my most powerful learning moments in the program and what made them so?
- How is the way a glacier changes the landscape different from the way a megaflood does?
- How does Roger's model support the theory that a giant flood carved the landscape of the Scablands?
- What forces do scientists believe separated Britain and France and created the English Channel?

### **Box 3 (Tasks)**

- The Channeled Scablands have about 150 distinct channels or coulees that cut across the rock. The two largest coulees are the Moses Coulee which is 40 miles long and the Grand Coulee which is 60 miles long. The Channeled Scablands take up an area of approximately 2,000 square miles. How would you figure out how many coulees there are, on average, per square mile? Justify your reasoning using mathematics.
- Using the density of water as a guide, describe with evidence why water is such a powerful moving force.
- Research a flood that was the result of melting ice. What changes did it make to the landscape?
- Draw a model of a glacier, label the parts, and diagram the resulting flood.

### **Box 4 (Enrichment)**

- Describe with evidence the redistribution of water on Earth after the last Ice Age.
- Research and describe using evidence, the closest flood plain near where you live.
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### **Box 5 (Extend/Real-Life)**

- Research with evidence how many active glaciers are left in the Continental United States.
- Would you consider a career in water? To learn more about modern day water treatment and career opportunities click this link:  
<https://spark.adobe.com/page/bhtrApJdL2l8/>